TABLE B-3. SEA-BASED STRATEGIC FORCE STRUCTURE UNDER THE ADMINISTRATION'S MODERNIZATION PROGRAM (Not constrained by arms-control limits) (By fiscal year) a/

	1983	1984	1985	1986	1987	1988
Poseidon C-3						
On line b/	15	15	15	15	13	14
Overhaul c/	4	4	4	4	6	5
Poseidon C-4						
On line	9	7	7	7	10	12
Overhaul	3	5	5	5	2	0
Trident C-4 d/						
On line	2	3	5	6	8	8
Overhaul	0	0	0	0	0	0
Trident D-5 Backfit e/						
On line	-	-	-	-	-	-
Overhaul	-	-	-	-	-	-
Trident D-5						
On line	-	-	-	-	-	-
Overhaul	-	-	-	-	-	-
SLCM (Nuclear-Armed) f/	-	30	82	185	297	400

(Continued)

a/ According to the terms of SALT I, the United States may have no more than 44 modern, nuclear-powered SSBNs with 656 tubes. It can increase this to 710 tubes by retiring ICBM launchers deployed prior to 1964 (for example, Titan II).

b/ The status of submarines is shown as of the last day of each fiscal year. Submarines not in overhaul or in post-overhaul shakedown periods are considered to be on line. This includes Poseidon submarines in extended refit periods (ERPs).

TABLE B-3. (Continued)

	1989	1990	1991	1992	1993	1994
Poseidon C-3						
On line b/	15	16	17	19	16	14
Overhaul c/	4	3	2	0	0	0
Poseidon C-4						
On line	12	12	12	12	11	9
Overhaul	0	0	0	0	0	0
Trident C-4 d/						
On line	8	8	7	6	5	3
Overhaul	0	0	1	2	2	3
Trident D-5 Backfit e/						
On line	-	-	-	-	1	2
Overhaul	-	-	-	-	0	0
Trident D-5						
On line	1	2	4	5	6	7
Overhaul	0	0	0	0	0	0
SLCM (Nuclear-Armed) f/	400	400	400	400	400	400

(Continued)

c/ Submarines are considered to be in overhaul if they are actually in overhaul or in post-overhaul shakedown periods. The Poseidon overhaul schedule was provided by Navy staff officials.

d/ Delivery dates for Tridents 1 through 15 are from Department of the Navy Congressional Data Sheets for the President's fiscal year 1984 budget. Data for Tridents 16-20 are extrapolated from these data. Based on data supplied by Navy officials, CBO assumes the initial Trident overhauls will occur nine years after delivery; overhauls last 12 months plus an eight-month post-overhaul shakedown period, and there is a nine-month post-delivery shakedown period after delivery and before the submarine goes on patrol. See also testimony of RADM

TABLE B-3. (Continued)

	1995	1996	1997	1998	1999	2000
Poseidon C-3						
On line b/	11	8	5	3	0	0
Overhaul c/	0	0	0	0	0	0
Poseidon C-4						
On line	7	5	3	1	0	0
Overhaul	0	0	0	0	0	0
Trident C-4 d/						
On line	2	0	0	0	0	0
Overhaul	2	3	1	0	0	0
Trident D-5 Backfit e/						
On line	4	5	7	8	8	8
Overhaul	0	0	0	0	0	0
Trident D-5						
On line	8	9	10	10	10	9
Overhaul	0	0	0	2	2	3
SLCM (Nuclear-Armed) f/	400	400	400	400	400	400

James D. Murray, Jr., USN, before the Subcommittee on Defense, House Appropriations Committee, DoD Appropriations for 1980, Part 3, p. 418, March 15, 1979.

e/ Trident D-5 Backfit submarines are shown here to distinguish these conversions from the delivery of D-5-equipped Tridents.

f/ Because of its importance to the Administration's strategic program, the nuclear-armed version of the Tomahawk land-attack missile (TLAM-N) is assumed to be introduced at an annual rate of triple its fraction of the total Tomahawk production. That is, approximately 400 TLAM-N of a total SLCM purchase of 4000 are introduced at a rate of 30 percent instead of 10 percent of annual production.

TABLE B-4. CHARACTERISTICS OF U.S. BALLISTIC MISSILE FORCES a/

System	Number of Reentry Vehicles	Yield per RV (KT)	CEP (Nautical Miles)	Throwweight (pounds)	System Availability	Silo Hardness (PSI)
Titan II	1	9,000	0.8	8,275	0.85 b/	c/
Minuteman II	1	1,200 d/	0.34	1,625	0.95 e/	2,000 f/
Minuteman III						
Mk12	3	170	0.12	1,975	0.95	2,000
Mk12A g/	3	335	0.12	1,975	0.95	2,000
MX g/	10	335	0.05	7,900 h/	0.95	2,000
SICBM i/	1	475	0.07	1,000	0.90	N/A
Poseidon (C-3)	10	40	0.25	3,300 j/	0.62 k/	N/A
Trident I (C-4)	8 l/	100	0.25	2,900	0.62/0.70 m/	N/A
Trident II (D-5)	8 n/	475 o/	0.07-0.11 p/	5,075 q/	0.70	N/A
SLCM (TLAM/N) r/	1	200	.05	N/A	N/A	N/A

NA = Not Applicable

a/ Unless otherwise noted, characteristics are drawn from John M. Collins and Thomas Peter Glakas, U.S./Soviet Military Balance, Statistical Trends, 1970-1981, Congressional Research Service, Report No. 82-162S (October 1981, updated September 1982).

b/ Because it is liquid-fueled, Titan II is probably less available than solid-propellant ICBMs. This figure is drawn from Representative Thomas J. Downey, "How to Avoid Monad," as reprinted in Congressional Record, September 20, 1976, pp. S31250-31258.

c/ Less than Minuteman. See testimony of Gen. David C. Jones, USAF, before the Senate Armed Services Committee, DoD Authorization for Appropriation for Fiscal Year 1983, Part 1, February 2, 1982, p. 55. At least one estimate holds that the hardness is 300 pounds per square inch. See Representative Les Aspin, "Judge Not by Numbers Alone," The Bulletin of the Atomic Scientists (June 1980), p. 30.

d/ Collins provides only a one to two MT estimate. Many sources cite the 1.2 MT figure. See, for example, A.A. Tinajero, U.S./U.S.S.R. Strategic Offensive Weapons and Projected Inventories Based on Carter Policies, Congressional Research Service, Report No. 81-238F (September 1981).

(Continued)

e/ Minuteman alert rates are said to be "well above 90 percent" and "virtually 100 percent" by DoD officials. See, respectively, Office of the Joint Chiefs of Staff, Military Posture for 1983, p. 71, and testimony of Lt. Gen. Kelly Burke, USAF, before the House Armed Services Committee, February 25, 1982.

f/ Testimony of Secretary of Defense Caspar W. Weinberger before the House Armed Services Committee, October 6, 1981.

g/ Tinajero, op. cit.

h/ Testimony of Lt. Gen. Kelly Burke, USAF, op.cit. This is within the 3,600 kilogram ceiling for light ICBMs that the United States established unilaterally in the SALT II negotiations.

i/ CBO estimate based on general characteristics needed for a small, counterforce-capable ICBM.

j/ SLBM throwweights from testimony of Paul Nitze before the Senate Committee on Foreign Relations, July 12, 1979.

k/ CBO estimate of availability of on-line submarine-launched missiles on peacetime alert based on Navy testimony.

l/ Most estimates provide this number. See, for example, Downey, op. cit., Tinajero, op. cit., and Nitze, op. cit.

m/ The two values shown are for deployment of on-line Poseidon and Trident SSBNs, respectively.

n/ CBO estimate based on 10-RV loading for the previous D-5 baseline warhead, the Mk12A, which provided a lower yield. The 10-RV estimate is from Tinajero, op.cit.

o/ Aviation Week and Space Technology (January 17, 1983), p. 26.

p/ The lower estimate has appeared in many sources. See, for example, Aviation Week and Space Technology (March 22, 1982), p. 18.

q/ Estimate based on testimony of RADM William A. Williams III, USN, before the Subcommittee on Strategic and Theater Nuclear Forces, Senate Armed Services Committee, October 30, 1981.

r/ Assumptions drawn from Nitze, op.cit., and Aspin, op.cit., as well as Richard K. Betts, ed., Cruise Missiles: Technology, Strategy, Politics (Brookings Institution, 1981).

TABLE B-5. CHARACTERISTICS OF U.S. STRATEGIC BOMBER FORCES

System	Weapons Carriage (Maximum) Bombs	SRAM	ALCM	Weapon Yield (KT)	CEP a/ (NM)
FB-111A b/	2	4	0	1,000	0.10
B-52G					
Penetrate	4	8	0	1,000	0.10
Standoff-Penetrate	4	8	12	1,000	0.10
Standoff	0	0	12	-	-
B-52H					
Penetrate	4	8	0	1,000	0.10
Standoff-Penetrate	4	8	12	1,000	0.10
Standoff	0	0	20	-	-
B-1B					
Penetrate c/	8	16	0	1,000	0.10
Standoff-Penetrate	8	16	14	1,000	0.10
Standoff	0	0	22	-	-
ATB d/	5	10	0	1,000	0.10
ALCM	-	-	-	200	0.05 e/
SRAM	-	-	-	200	0.20

(Continued)

(Footnotes to Table B-5)

NOTE: Unless otherwise indicated, weapons carriage parameters are based on Undersecretary of Defense Richard A. DeLauer, letter of November 17, 1981, to Senator Ted Stevens, Congressional Record, December 1, 1981, pp. S14171-2. Other parameters are from testimony of Paul Nitze before the Senate Committee on Foreign Relations, July 12, 1979.

a/ Circular Error Probable (nautical miles). The Offensive Avionics System (OAS) for B-52G/H aircraft came into being after publication of Nitze's estimates. It is said that it will, among other things, "significantly improve B-52G/H weapons accuracy." (See Harold Brown, DoD Annual Report for FY 1982, January 19, 1981.) This will affect all weapons carried by B-52G/H as well as B-1B, which will be OAS equipped. A reduction in these CEP estimates of 25 percent is assumed in fiscal years 1990/1996 to account for OAS installation. See "Keeping the Boeing B-52 Operational Until the End of the Century," Interavia (December 1978), pp. 1181-84.

b/ Estimates based on data from Air Force Magazine (December 1977), p. 50.

c/ Estimates assume no weapons carried externally in a penetrator mission. Up to 14 additional bombs/SRAM could be carried externally.

d/ The ATB is said by some to be capable of carrying less than half the payload of the B-1B. See Representative Bill Chappell, Jr., statement in Congressional Record, November 18, 1981, p. H8488.

e/ This is a composite estimate based on Nitze: op. cit.; information in Richard K. Betts, ed. Cruise Missiles: Technology, Strategy, Politics (Brookings Institution, 1981); and Representative Les Aspin, "Judge Not by Numbers Alone," Bulletin of the Atomic Scientists (June 1980), pp. 28-33.

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APPENDIX C. SOVIET STRATEGIC FORCES

TABLE C-1. ILLUSTRATIVE ON-LINE SOVIET BALLISTIC MISSILE FORCES AND CHARACTERISTICS
(Not constrained by arms-control limits) a/

System	Number Deployed			No. of Reentry Vehicles	Yield per RV(KT) b/	CEP(NM) c/			Throw-weight (pounds) d/	System Availability e/
	1983	1990	1996			1983	1990	1996		
SS-11	550	520	520	1	950	0.76	0.76	0.76	2,200	0.85
SS-13	60	60	60	1	600	1.0	1.0	1.0	1,500	0.85
SS-17	150	150	150	4	750	0.17	0.14	0.10	6,025	0.95
SS-18 MOD 1	24 f/	24	24	1	2,500	0.15	0.12	0.08	16,500	0.95
MOD 2/ Follow-on g/	284	284	284	10	500	0.15	0.12	0.08	16,700	0.95
SS-19/ Follow-on g/	330	360	360	6	550	0.15	0.12	0.08	7,525	0.95
New Solid 1- Silo h/	0	100	300	10	500	--	0.10	0.08	8,000	0.95
New Solid 2- Mobile h/	0	100	300	4 i/	500	--	0.10	0.08	3,000	0.90
SS-N-6 (YI)	448	448	160	1	750	--	0.5 j/	--	1,600	0.40
SS-N-8 (DI, DII)	280	280	268	1	750	--	0.5	--	1,800	0.40
SS-N-18 (DIII)	176	240	240	3	500	--	0.3	--	2,500	0.40
SS-NX-20 (Typhoon)	20	200	440	9	100	--	0.3	--	7,500	0.40

a/ Except as noted, ICBM estimates are based primarily on Department of Defense, Soviet Military Power 1983. SLBM estimates are based primarily on Aviation Week and Space Technology (June 16, 1980).

b/ Mainly from John M. Collins and Thomas Peter Glakas, U.S./Soviet Military Balance, Statistical Trends, 1970-1981. Congressional Research Service Report No. 82-162S, October 1981 (Updated September 1982).

c/ Circular Error Probable, in nautical miles, from estimates provided in Aviation Week and Space Technology June 16, 1980; Testimony of Paul Nitze before the Senate Committee on Foreign Relations, July 12, 1979; and Collins and Glakas, U.S./Soviet Military Balance, Statistical Trends, 1970-1981. The major point is that there is a trend, through modification of existing missiles and development of new generations, toward ICBM accuracy of under 0.1 nm. See Representative Les Aspin, "Judge Not by Numbers Alone," Bulletin of the Atomic Scientists (June 1980), p. 39.

d/ ICBM estimates from Collins and Glakas, op.cit.; SLBM estimates from Nitze, op.cit.

e/ Older liquid-fueled ICBM systems assumed analogous to Titan II; newer systems assumed similar to U.S. ICBMs. Estimates for SLBMs are for on-line missiles in peacetime alert.

f/ Estimate based on top-line Soviet RV count provided in Department of State, "Fact Sheet on START," May 1982, and the number of RVs deployed on other systems.

g/ Soviet Military Power 1983 indicates that follow-on missiles to the SS-18 and SS-19 are to begin testing soon.

h/ CBO estimates based on numerous press reports on these two new missiles.

i/ See Defense Daily, February 22, 1983, p. 276. At least one other estimate holds that the mobile missile carries a single-warhead. See Newsweek (March 14, 1983), p. 15. Based on historical Soviet ICBM production rates reported by DIA (see Defense Daily, July 26, 1982, p. 126), it is conceivable that the Soviets could produce replacements for their existing ICBM force as well as the numbers of new missiles shown.

j/ Single estimates are for all years and reflect lack of data regarding trends in SLBM accuracy; estimates from Nitze, op.cit.

TABLE C-2. ILLUSTRATIVE ON-LINE SOVIET BALLISTIC MISSILE FORCES--CONSTRAINED BY SALT I AND SALT II (By fiscal year) a/

System	1983	1990	1996
SS-11	550	430	0
SS-13	60	0	0
SS-17	150	100	100
SS-18 MOD 1	24	0	0
MOD 2/Follow-on	284	308	308
SS-19/Follow-on	330	360	360
New Solid 1 - Silo b/	0	200	600
SS-N-6 (YI)	448	230	0
SS-N-8 (DI, DII)	280	280	268
SS-N-18 (DIII)	176	240	240
SS-NX-20 (Typhoon)	20	200	320

a/ The illustrative force is based on the following assumptions:

- The Soviets would develop the one "new type" ICBM allowed under SALT II and modernize their ICBM force with it and with updated versions of the SS-18 and SS-19.

- They would retain their large-throwweight SS-18 ICBM force as a hedge against a U.S. breakout.

- They would proceed with modernization of their SSBNs and SLBMs.

- They would modernize their long-range bomber force with the ultimate substitution of approximately 100 Blackjack bombers for older Bear/Bison types; the new bombers would be ALCM-capable.

b/ Constrained by SALT II, the new solid ICBM would probably have a throwweight of less than 7,900 pounds (3,600 kilograms) to remain within the ceiling established by U.S. unilateral SALT II understanding.

TABLE C-3. ILLUSTRATIVE ON-LINE SOVIET BALLISTIC MISSILE FORCES--CONSTRAINED BY START (By fiscal year) a/

System	1983	1990	1996
SS-11	550	290	0
SS-13	60	30	0
SS-17	150	75	0
SS-18 MOD 1	24	0	
MOD 2/Follow-on	284	124	60
SS-19/Follow-on	330	150	0
New Solid 1 - Silo	0	100	150
New Solid 2 - Mobile b/	0	100	100
SS-N-6 (YI)	448	224	0
SS-N-8 (DI, DII)	280	140	0
SS-N-18 (DIII)	176	160	128
SS-NX-20 (Typhoon)	20	100	220

a/ The illustrative force is based on the following assumptions:

- o The Soviets would continue to maintain the position of relative importance accorded their ICBM force, both by developing the two new types noted in Table C-1 and continuing improvements to older types.

- o They would retain some portion of their large-throwweight SS-18 ICBM force as a hedge against a U.S. breakout from the agreement.

- o They would modernize their sea-based force with the Typhoon/SS-NX-20 system.

- o They would modernize their long-range bomber force with the ultimate substitution of approximately 100 Blackjack bombers for older Bear/Bison types; the new bomber would be ALCM-capable.

b/ Assumes deployment of mobile ICBMs is allowed under START.

APPENDIX D. ATTACK SCENARIOS

Two scenarios are used in this study to aid in the assessment of modernization plans for U.S. strategic offensive forces: attack without warning and attack with warning. Each is representative of types of scenarios that have evolved over the years as rubrics for strategic force analysis. Taken together they represent the range of attack possibilities for which U.S. forces need to be prepared.

The attack without warning (or peacetime alert) is considered by many to be the greater challenge to U.S. capabilities because much of the strategic force is not maintained on constant alert. In this scenario only about a third of the strategic bombers and their crews would be ready for launch within a few minutes. Of the strategic submarine force, because of turnarounds between patrols, refit periods, and so on, roughly two-thirds (for Poseidon SSBNs) to three-quarters (for Trident SSBNs) of the on-line SSBN force would be on patrol and ready to respond. Only the ICBM force is assumed to be at virtually 100 percent alert on a day-to-day basis. This latter assumption is also applied to Soviet ICBMs, which represent about three-quarters of Soviet nuclear warheads. Soviet SSBNs are assumed to maintain a less than one-third-at-sea rate because of geographical and operational factors. Some small additional covert deployment of Soviet SSBNs might be possible without alerting U.S. forces. 1/

The attack without warning is assumed to occur at a Soviet-determined H-hour, when they simultaneously launch their ICBMs and SLBMs upon U.S. strategic nuclear forces and supporting elements, a so-called counterforce strike. On receipt of the tactical warning that an attack has been initiated, U.S. alert bombers begin to take off and escape from their bases. Bombers not on alert perish in the ensuing attack; so, too, do off-line SSBNs. For purposes of assessment, the ICBM force is assumed to "ride out" the attack, although the option always exists to launch on warning of an attack or while the attack is in progress. 2/

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1. This may also be true of the Soviet bomber force, although it will not be apparent in this assessment.

2. An alternative view holds that because of the extremely high risks involved in conducting a perfectly coordinated attack with thousands of ballistic missiles--some at the geographic limits of their command

In assessing the consequences of such an attack, CBO assumes that it would be conducted in the following fashion. Soviet SSBNs patrolling U.S. coasts would expend the majority of their missiles in attacking strategic bomber bases and likely bomber flyout areas. Some of their SLBMs might be used to attack time-sensitive command, control, and communications (C3) facilities. Soviet ICBMs, on the other hand, would conduct a two-on-one attack on Minuteman and MX silos, as well as striking the less time-sensitive C3 and other military installations. More sophisticated ICBM attack modes might be necessary against follow-on deployments of MX missiles or small ICBMs in super hardened silos. Should the small ICBM be based in a mobile mode, the Soviets might barrage large areas potentially containing the missiles.

The generated alert--or attack with warning--is thought by many technical specialists to be more representative of the manner in which a nuclear conflict could occur. In this scenario a steadily increasing level of tension over time between the superpowers would probably cause each of them to bring their central strategic nuclear forces--as well as other forces--to their highest states of readiness. A conflict in central Europe or the Persian Gulf region, in which perhaps both chemical and theater nuclear weapons are used, might then cause the Soviets to attempt to gain a decisive advantage through a preemptive strike on strategic and other forces in the United States.

The distinguishing feature in this scenario is the significantly higher fraction of U.S. bomber and strategic submarine forces that would be poised for retaliation. For example, virtually all SSBNs not actually in overhaul would have made ready and put to sea. Nearly all strategic bombers would have been readied. Some or all of these aircraft might have been dispersed to other airfields and/or had their reaction times reduced through a series of special measures. 3/

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and control system--the Soviets would never attempt it. Added to this would be Soviet uncertainties about a potential U.S. "launch on warning" or "launch under attack" of its ICBMs, plus unknowns about ballistic missile accuracy.

3. U.S. forces would have attained their highest level of readiness. Obviously an attack could occur when they are somewhere "between" the peacetime and generated-alert postures described here. A subsidiary issue is how long U.S. forces could sustain the higher alert posture.

On the Soviet side it is likely that a much larger fraction of the SSBN force would be at sea, as well as a fully alerted strategic bomber force. 4/ Because most Soviet firepower is concentrated in the high-alert ICBM force, however, the Soviet forces in generated alert would not be radically different from the peacetime alert force. For this reason, the exemplary Soviet attack structure remains much the same as that outlined in the attack-without-warning scenario, either increasing in intensity or else remaining much the same but with a larger reserve force withheld.

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4. This analysis does not specifically take into account the Soviet bomber force in assessing U.S. retaliatory capability.

APPENDIX E. BOMBER LAUNCH SURVIVABILITY

To assess the pre-launch survivability of the U.S. strategic bomber force, the Congressional Budget Office has developed a computer model--AWAVES 1/--that simulates an attack on U.S. strategic bomber bases by Soviet ballistic missile submarines (SSBNs) patrolling off the U.S. coast. The submarine-launched ballistic missiles (SLBMs) carried by these SSBNs pose the most significant threat to the bomber force before encountering Soviet air defenses, since intercontinental ballistic missiles (ICBMs) and SLBMs launched from Soviet home waters--with their nominal 30-minute flight time--would arrive to find alert bombers long since departed. 2/

Scenario for Attack

The general sequence of events involving a submarine-launched ballistic missile attack on U.S. bomber bases is relatively straightforward. At some predetermined hour, the Soviets would begin launching their SLBMs with the objective of destroying as many of the weapons carried by the bomber force as possible. Once the missiles were launched, U.S. warning systems would detect the attack, and U.S. command and control centers would transmit the warning to the strategic bomber bases. Detection and warning require approximately 90 seconds; all bases would be alerted simultaneously. 3/

An attack might occur during peacetime as a bolt out of the blue, or it might be precipitated during a period of rising hostilities. In the former case, the bomber fleet would receive only tactical warning--the message from command and control centers that an attack had been initiated. In the

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1. Attacker's Weapons Allocation Versus Escaping Strategic Bombers.

2. Soviet air defenses are considered a threat to the retaliatory capability of the surviving bomber force and so are not relevant in assessing bomber pre-launch survivability--that is, the survival of the force prior to its retaliatory attack on the Soviet Union.

3. Alton Quanbeck and Archie Wood, Modernizing the Strategic Bomber Force: Why and How (Brookings Institution, 1976), p. 46.

latter case, the bomber fleet would also have had the benefit of strategic warning--advance intelligence regarding an increased risk of attack. On a day-to-day basis, about 30 percent of the bomber force stands 24-hour alert; that is, the bomber and its crew are constantly ready to take off within a short time. During a period of tension or crisis, up to 95 percent of the force can be placed on alert status. Additional measures can be taken to reduce the time between warning and flyout, such as placing alert crews in the cockpits of the aircraft, keeping the engines running, and so on. In either case, bombers not on alert at the time an attack is initiated are likely to be destroyed.

Assessing Survivability

Assessing the survivability of the bomber force in an attack is much less straightforward than describing the events involved. A major reason for this is the dynamic, temporal nature of the process to be modeled. For example, a submarine cannot launch all of its missiles simultaneously; it requires a short interval to recover from the force of launching a missile before it can fire another. 4/ For a submarine carrying 16 ballistic missiles, four minutes could elapse between its first and sixteenth salvo. Coupled with this is the time-sensitive nature of the targets. On the ground, bombers are almost sure targets; once they begin to fly away, their vulnerability decreases continually as they gain altitude and distance. There are two reasons for this: first, assuming the bombers fly out in a random pattern from the base, their location is no longer known with certainty and the attacker must target an exponentially increasing area; second, the lethal effects of the attacking weapons themselves decrease significantly at higher altitudes (above a few hundred feet). The importance of this from a defender's point of view is immediately apparent: time is of the essence. For the attacker allocating his weapons, time is also important. Presumably, the attacker's objective is to destroy as many bomber weapons (rather than bombers) as possible, since it is these that provide the threat. The value of a B-52G that carries up to 20 ALCMs is greater, in an absolute sense, than an FB-111A that carries no more than 6 weapons. But if the B-52 is located at an inland base, by the time the SLBM arrives on target it may be at such an altitude and distance that the attacker would have to expend more weapons--with a lower probability of kill--than if he went for the FB-111 situated at a much closer coastal base. In this perspective, the

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4. Assumed to be approximately 15 seconds. See James A. Winnefield and Carl H. Builder, "ASW-Now or Never," U.S. Naval Institute Proceedings, vol. 97, no. 9/823 (September 1971), p. 21.